VI. SULFUR DIOXIDE EMISSION REGULATIONS

A. Sources constructed or modified prior to August 11, 1977 shall be considered an existing source. All existing sources of sulfur dioxide emissions, except for sources listed in Section VII, shall comply with the following:

1. Averaging time - The averaging time for all sulfur dioxide emissions standards for sources which utilize a CEM shall be a three hour rolling average and the frequency of fuel sampling for sources which utilize a fuel sampling plan approved pursuant to Section IV.B.2. shall be as specified in such plan.

2. If the sum of sulfur dioxide emission rates for all sources located on a contiguous site is less than three (3) tons per day potential uncontrolled SO_2 emissions, and if all Federal and State Ambient Air Quality Standards are met no process based SO_2 emission standard shall apply.

3. Existing sources of sulfur dioxide shall not emit or cause to be emitted sulfur dioxide in excess of the following process-specific limitations. (Heat input rates shall be the manufacturer's guaranteed maximum heat input rates).

a. Coal-fired operations including coal-fired steam generation:

(These standards are also applicable to the use of coal-based by-product fuels.)

(i) Units with a heat input from coal or coal-based by-product fuels of less than 300 million BTU per hour:

1.8 pounds of sulfur dioxide per million BTU of heat input.

(ii) Units with a heat input from coal or coal-based by-product fuels equal to or greater than 300 million BTU per hour:

1.2 pounds of sulfur dioxide per million BTU of heat input.

b. Oil-fired Operations Including Oil-Fired Steam Generation

(i) Units with a heat input from oil of less than 300 million BTU per hour:

1.5 pounds of sulfur dioxide per million BTU of heating input.

(ii) Units with a heat input from oil equal to or greater than 300 million BTU per hour:

0.8 pounds of sulfur dioxide per million BTU of heating input.

c. Combustion Turbines

(i) Combustion Turbines with a heat input of less than 300 million BTU per hour:

1.2 pounds of sulfur dioxide per million BTU of heating input.

(ii) Combustion Turbines with a heat input equal to or greater than 300 million BTU per hour:

0.8 pounds of sulfur dioxide per million BTU of heating input.

d. Natural Gas Desulfurization

Desulfurization Plants emitting more than five (5) tons of sulfur dioxide per day:

2 pounds of sulfur dioxide per 1,000 cubic feet of (Actual) delivered gas.

e. Petroleum Refining

0.7 pounds sulfur dioxide for the sum of all SO_2 emissions from a given Refinery, per barrel of oil processed. (Averaged over a daily 24 hour period, i.e. midnight through 23:59.)

f. Cement Manufacture

7 pounds of sulfur dioxide per ton of material (including fuel) processed.

g. Sources Not Specifically Listed Above

Application of all available practical methods of control which are technologically feasible and economically reasonable. This is to be determined by the Division.

4. Recordkeeping and Reporting - All sources which have record keeping and reporting requirements shall comply with Section IV.G. of this regulation.

5. Data Retention - All sources which have recordkeeping and reporting requirements shall retain emission data for the proceeding two year period as referenced in Section IV.H. of this regulation.

B. All new sources of sulfur dioxide emissions shall comply with emission limitations as specifically provided by this subsection B.

1. For purposes of this Section VI.B. a new source is defined as a newly constructed or modified source of sulfur dioxide emissions which has not been issued an Emission Permit (in accord with Regulation No. 3 of this Commission) prior to the August 11, 1977 effective date of this amended regulation.

2. The averaging time for all new source emissions standards for sulfur dioxide shall be three (3) hours, and any three-hour rolling average of emission rates which exceeds these standards is a violation of this regulation.

3. The term "modification" is as defined in the Common Provisions Regulation, Section I.G. except that any source of sulfur dioxide subject to an emission standard which measures the sum of all sulfur dioxide emissions from a given facility shall not be considered "modified" for the purposes of this regulation unless the alteration may cause an increase in the sum of all sulfur dioxide emissions from such facility.

4. New sources of sulfur dioxide shall not emit or cause to be emitted sulfur dioxide in excess of the following process-specific limitations. (Heat input rates shall be the manufacturer's guaranteed maximum heat input rates.)

a. All Coal-fired Operations, Including Coal-Fired Steam Generation

(i) Units converted from other fuels to coal:

1.2 lbs. SO_2/million BTU of coal heat input.

(ii) Units with a coal heat input of less than 250 million BTU per hour:

1.2 lbs. SO_2/million BTU coal heat input.

(iii) Units with a coal heat input of 250 million BTU per hour or greater:

0.4 lbs. SO_2/million BTU coal heat input.

b. All Oil-fired Operations, including Oil-Fired Steam Generation.

(i) Units with an oil heat input of less than 250 million BTU per hour:

0.8 pounds of sulfur dioxide per million BTU of oil heat input.

(ii) Units with an oil heat input of 250 million BTU per hour or greater:

0.3 lbs. SO_2/million BTU of oil heat input.

c. Combustion Turbines

(i) Combustion Turbines with a heat input of less than 250 million BTU per hour:

0.8 pounds of sulfur dioxide per million BTU of heat input.

(ii) Combustion Turbines with heat input of 250 million BTU per hour or greater:

0.35 lbs. SO_2/million BTU of heat input.

d. Natural Gas Desulfurization

(As employed in this section, the term “delivered” means (a quantity of gas) delivered to the transmission pipeline).

(i) Desulfurization Plants emitting less than three (3) tons per day of SO_2:

2.0 lbs. SO_2/1000 cubic feet of (actual) delivered natural gas.

(ii) Sources emitting three (3) or more tons per day of SO_2:

0.8 lbs. $S0_2$/1000 cubic feet of (actual) delivered natural gas.

e. Petroleum Refining

0.3 lbs. sulfur dioxide, for the sum of all SO_2 emissions from a given refinery per barrel of oil processed. (Averaged over a daily 24 hour period, i.e. midnight through 23:59.)

f. Production of Oil from Shale

(i) Production of oil from shale shall be subject to the emission limitations provided in Air Quality Control Commission Regulation No. 6, Subpart B (Non Federal New Source Performance Standards (NSPS), Section IV.C.3.)

g. Refining of Oil Produced from Shale

(i) Refineries processing less than 1,000 barrels per day: No process emission standard.

(ii) Refineries processing 1,000 or more barrels per day:

0.3 lbs. sulfur dioxide, for the sum of all sulfur dioxide emissions from a given refinery, per barrel of oil processed.

h. Sulfuric Acid Production

4.0 lbs sulfur dioxide/ton of acid produced and 0.15 lbs. H_2SO_4 mist/ton of acid produced.

5. Any new source of sulfur dioxide not specifically regulated above shall:

a. limit emissions to not more than two (2) tons per day of sulfur dioxide, or

b. utilize best available control technology as determined by the Division subject to review by the Commission.

6. Recordkeeping and Reporting - All sources which have recordkeeping and reporting requirements shall comply with Section IV.G. of this regulation.

7. Data Retention - All sources which have recordkeeping and reporting requirements shall retain emission data for the preceding two year period as referenced in Section IV.H. of this regulation.

8. A written statement of the basis and purpose of this new source emission control regulation, which includes a detailed analytical evaluation of the scientific and technical rationale justifying this regulation has been prepared and adopted by the Commission on August 11, 1977. This written statement entitled, "Rationale for the Promulgation of a New Source Emission Control

Regulation and Ambient Air Quality Standards for Sulfur Dioxide", is hereby incorporated in this regulation by reference, in accord with C.R.S. 1973, 24-4-103 as amended.

C. Fuel Sampling

1. All fuel sampling plans must be approved by the Division. The following methods shall be used for all fuel sampling plans. Any deviations from these methods must be approved by the Division.

a. Sulfur content in coal - ASTM methods D3177-75 or D4239-85.

b. Sulfur content in oil - ASTM methods D2880-78 or D4294-89.

c. Sulfur content in natural gas - ASTM methods D1072-80, D3031-81, D3246-81, D4084-82 or continuous H^2S monitoring of fuel gas line).

d. Gross calorific (or BTU) - ASTM methods D2015-77 or D3286-85. (BTU content shall be based on the lowest gross heating value of the fuel).

D. Performance Tests

Prior to granting of a final approval permit or amending a permit, when an emission source or control equipment is altered, or at any time when there is reason to believe that emission standards are being violated, the Division may require the owner or operator of any facility subject to the emission standards under Section VI to conduct performance tests, as measured by EPA Methods 1-4 and Method 8 (40 CFR 60.275, Appendix A, Part 60), or any other method which the Division finds appropriate to determine compliance with this subsection of this regulation.

1. The owner or operator of an existing source of sulfur dioxide shall, upon request of the Division, conduct performance test(s) and furnish the Division a written report of the results of such performance test(s) to determine compliance with this regulation.

2. Performance test(s) shall be conducted and data reduced and recorded in accordance with the test methods and procedures specified above unless the Division:

a. approves the use of an alternative method the results of which the Division has determined to be adequate for indicating whether a specific source is in compliance, or

b. waives the requirement for performance test(s) because the owner or operator of a source has demonstrated by other means to the Division's satisfaction that the affected facility is in compliance with the standard. Nothing in this paragraph C. shall be construed to abrogate the Commission's or Division's authority to require testing under Article 7 of Title 25, Colorado Revised Statute 1973, and regulations of the Commission promulgated thereunder.

3. Any person may apply to the Division Director for approval of an alternative test method, an alternative method of control, an alternative compliance period, an alternative emission limit, or an alternative monitoring schedule. The application must include a demonstration that the proposed alternative produces an equal or greater air quality benefit than that required b this subsection VI, or that the alternative test method is equivalent to that required by these regulations. The Division Director shall obtain concurrence from EPA when approving an alternative test method, an alternative method of control, an alternative compliance period, an alternative emission limit, or an alternative schedule.

4. The owner or operator of an affected facility shall provide the Division thirty (30) days prior notice of the performance test to afford the Division the opportunity to have an observer present.

D. Related Compounds Containing Sulfur in Oxidized States:

1. For the purposes of this regulation, ail oxidized forms of sulfur (including, but not restricted to sulfur trioxide (SO_3), trionyl chloride ($SOCl_2$), and sulfuric acid mist (H_2SO_4)) shall be considered as sulfur dioxide.

2. Quantities of such oxidized sulfur compounds shall be converted on a molar basis to an equivalent quantity of sulfur dioxide. The total of all such quantities, (expressed in parts per million by volume sulfur-dioxide-equivalents of other oxidized forms) shall be interpreted as "parts per million by volume sulfur dioxide" as used in Section B. above.